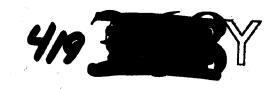
RUBICON



BOEING REALTY CORPORATION FORMER C-6 FACILITY LOS ANGELES, CALIFORNIA

INTERNAL TECHNICAL MEMORANDUM SEMI-ANNUAL ADJACENT SITES STATUS UPDATE

To:

Ms. Stephanie M Sibbett

Boeing Realty Corporation

4900 E. Conant Street

Building 1

Long Beach, CA 90808

From:

Mohsen Mehran, Ph.D.

Rubicon Engineering

Date:

September 28, 2004

Subject:

Semi-Annual Adjacent Sites Status Update

Boeing Realty Corporation

Former C-6 Facility Los Angeles, California

PURPOSE

The purpose of this memorandum is to update Boeing Realty Corporation (BRC) regarding the current environmental investigation and remediation activities and regulatory status of sites located adjacent to or in the vicinity of the Former C-6 Facility. These sites are shown in Figure 1 and are listed below.

Del Amo Site
Risto Los Angeles
Ecology Control Industries
American Polystyrene Corporation
PACCAR Inc.
Mighty USA
Redman Equipment
Montrose Chemical Corporation
Jones Chemical
Farmer Brothers
Capitol Metals
International Light Metals (ILM)

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The regulatory oversight for these sites is provided by the United States Environmental Protection Agency, (EPA), Department of Toxic Substances Control (DTSC), or California Regional Water Quality Control Board, Los Angeles Region (LARWQCB).

This update focuses on activities conducted at adjacent sites during the first six months of 2004, although more recent information through September 2004 is presented for certain sites where information was available.

APPROACH

Documents provided by BRC and the LARWQCB were collected, reviewed, and evaluated. The principal findings are being compiled in an administrative index and summarized in this update according to the following format:

Background Regulatory oversight Recent Activities Schedule

DEL AMO SITE

Background

A 270-acre synthetic rubber facility, known as the Del Amo Plant, was operated by several companies including Shell Oil Company and Dow Chemical Company from 1942 to 1972. The chemicals of concern are benzene and chlorinated solvents. In September 1999, USEPA issued a joint Record of Decision (ROD) for the Del Amo and Montrose sites. The ROD calls for containing the NAPLs rather than cleaning up the aquifers to the drinking water standards. The ROD also requires implementation of a pump-and-treat system to contain the dissolved plumes. The respondents for this site are primarily Shell Oil Company and the General Services Administration.

On May 8, 2003, EPA issued an Administrative Order to the respondents for conducting initial remedial design work. In addition to Montrose and Shell Oil, EPA will conduct groundwater modeling portion of the work outlined in the Administrative Order.

Regulatory Oversight

The Del Amo site is a Superfund site and EPA is the oversight agency. In the last several months, EPA has put pressure on the LARWQCB and the owners/operators of facilities adjacent to the Del Amo and Montrose sites to further characterize the water quality of the water-bearing zones beneath these sites with emphasis on the Gage aquifer and the C Sand. The LARWQCB (February 19, 2004) has initiated correspondence with Ecology Control Industries (ECI), American Polystyrene, and PACCAR, Inc., a summary of which is provided in subsequent sections.

On June 25, 2004, the LARWQCB informed EPA in writing that it has sent administrative orders to ECI, American Polystyrene, and PACCAR. In its June 25, 2004 letter, the LARWQCB



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concurs with the EPA that it is not barred from proceeding with additional enforcement actions related to these facilities.

Recent Activities

Shell Oil and Montrose have recently installed wells in the Gage aquifer. According to URS Corporation (URS), there are approximately 30 wells drilled into the Gage aquifer. The well locations and the TCE plume, as provided by EPA, are shown in Attachment 1. According to the January 2004 data presented in Attachment 1, Well XG-14, located east of Former C-6 Facility and south of PACCAR, Mighty USA, and Redman Equipment showed the highest TCE concentration (120 ug/l).

On May 10, 2004, Jeff Dhont of EPA received comments from the technical team regarding the Interim Modeling Memorandums No. 7 and No. 8. The reviewers expressed concern regarding source terms, vertical hydraulic conductivities, weighting scheme applied to each investigation area, and model uncertainties.

I contacted Tom Vinckier to obtain an update of Geosyntec's activities. Tom informed me that he is no longer involved and we need to contact John Dudley of URS Corporation. Based on my discussions with John Dudley, Geosyntec is involved in groundwater risk assessment and URS is handling most other tasks. Currently, URS is conducting the Initial Remedial Design Work in response to the September 2003 Administrative Order issued by EPA. Contact information for John Dudley is provided in Attachment 4.

Schedule

EPA is requesting further characterization of the Gage aquifer at facilities upgradient of the Del Amo site. Initial remedial design is expected to continue concurrent with additional site characterization until mid 2005. Large-scale groundwater extraction pilot tests are anticipated to extend to 2007 as part of the overall remedy.

RISTO LOS ANGELES

The Risto Los Angeles facility is located at 1441 W. 190th Street in Torrance, California, immediately north and upgradient of the Former C-6 facility. Although in 1992 DTSC identified the facility for preliminary environmental assessment, no additional information has been available.

ECOLOGY CONTROL INDUSTRIES

Background

ECI is located at 19500 S. Normandie Avenue in Torrance, California. The facility has been previously occupied by Lawson Enterprises, Incorporated (1962 to 1983), Major Paint Company (December 1984 to July 1985), Cal Gypsum (1985), and Andrews Pre-Fab (1986). In July 1986, three 5,000 gallon underground storage tanks (USTs), which according to the LACoDPW contained recycled solvents and thinners, were removed. These USTs were used from 1962 to 1985. Three, 8-foot diameter aboveground storage tanks (ASTs) contained methylene chloride. TCE and PCE have been detected in soil samples.



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Regulatory Oversight

On February 19, 2004, the LARWQCB sent ECI an Investigative Order to provide additional information particularly related to $1{,}100 \text{ mg/}\ell$ of methylene chloride detected at American Polystyrene facility which may have originated from ECI facility. A response was requested by March 31, 2004.

On April 5, 2004, John Geroch of the Regional Board sent an email to Joe McCaffrey of ECI requesting to respond to the LARWQCB letter of February 19, 2004. On April 6, 2004, Joe McCaffrey sent an email that a response has been submitted.

On August 10, 2004 the LARWQCB sent ECI requirements to continue investigation of soil and groundwater and submit a report by September 10, 2004. Through email correspondence, LARWQCB granted ECI an extension to December 10, 2004. No other documents were available for review. ECI contact information is provided in Attachment 4.

Recent Activities

On February 18, 2004, ECI informed the Santa Ana RWQCB that ECI did not dewater during December 2003, January 2004, or February 2004. They dewater sediments during storm cleaning. There were no other documents that would indicate any activities in response to the LARWQCB inquiries.

Schedule

There is no planned activity in the documents available for review.

AMERICAN POLYSTYRENE CORPORATION

Background

American Polystyrene Corporation, formerly known as Amoco Chemical and Brand Plastics, has been located at 1225 W. 196th Street in Torrance, California since 1962. These companies produced polystyrene by mixing a styrene polymer and 20 % mineral oil solution (Ecology & Environment, March 21, 1987). The facility was listed under RCRA. Brand Plastics operated the facility from 1962 to 1964. Amoco operated the facility from 1964 to 1993. On May 6, 1993 American Polystyrene purchased the property from Amoco. Available reports demonstrate that soil and groundwater have been impacted by the past operations. The principal chemicals of concern are TCE, PCE, methylene chloride, and styrene. A summary of past activities that may have caused soil and groundwater contamination is presented in Attachment 2.

Regulatory Oversight

December 12, 2003 LARWQCB sent an Investigative Order requiring additional information from American Polystyrene by January 31, 2003 (2004). LARWQCB

required quarterly groundwater monitoring with the first report due by

April 29, 2004.

January 15, 2004 American Polystyrene provided additional information to LARWQCB.

February 19, 2004 LARWQCB requested additional information from BP Products/Amoco

by March 31, 2004 and indicated that future correspondence will be sent



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|---|---|
| | to both American Polystyrene and BP Products as Responsible Parities (RPs). LARWQCB required quarterly groundwater monitoring, with the first report due by April 29, 2004. |
| March 23, 2004 | Atlantic Richfield Co., on behalf of BP Products/Amoco, requested an extension to submit additional information in response to the LARWQCB's February 19, 2004 letter. |
| April 16, 2004 | LARWQCB extended submittal date for additional imformation to April 30, 2004. |
| April 28, 2004 | Winefield & Associates, the consultant for American Polystyrene, requested clarification from LARWQCB regarding scope of work of groundwater monitoring. |
| May 4, 2004 | BP Products/Amoco provided additional information to LARWQCB |
| July 20, 2004 | LARWQCB clarified letter to American Polystyrene and requested groundwater monitoring in July/August 2004 with a report submittal by October 31, 2004. |
| August 6, 2004 | LARWQCB sent a letter to American Polystyrene regarding cost recovery. |

Recent Activities

There are no documents indicating any recent activities at the site.

PACCAR (Former Trico Industries)

Background

The facility is located at 1206 West 196th Street in Torrance, California. Property use included agricultural activities (1920-1940), construction of a cesspool (1957) followed by paint manufacturing and storage of solvents by American Chemsolv. In 1974 B&W Monarch purchased the site and later Trico Industries purchased the facility from B&W in January 1981 and used the site for manufacturing and testing well completion equipment. In 1989, Trico sold the western portion (19706 S. Normandie Avenue) to Mighty USA. Hazardous materials used at the site included paints, paint thinners, and various types of lubricating and hydraulic oils. Elevated concentrations of diesel fuel, TCE, PCE, TCA, and 1,2-DCA have been detected in soil and groundwater. Details are provided in Attachment 3.

Regulatory Oversight

On February 19, 2004, the LARWQCB sent a letter requesting additional investigation and groundwater monitoring.

On August 23, 2004, the LARWQCB requested 2 copies of a workplan and 1 copy of a report of investigation presumed completed by PACCAR in 2004. The workplan and report are due to LARWQCB by September 24, 2004.

Recent Activities

There was no documentation of recent activity available at the LARWQCB



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Schedule

There is no document that indicates near future activities at this site.

MIGHTY USA

This facility is located at 19706 S. Normandie Avenue in Torrance, California and it was part of the former Trico Industries site. Mighty USA also leases the remainder of the eastern portion of the property which is owned by PACCAR.

On September 2, 2004 the LARWQCB sent PACCAR/Mighty an Investigative Order to provide additional information by October 22, 2004

REDMAN EQUIPMENT

This facility is located at 19800 S. Normandie Avenue in Torrance, California. There is evidence of a diesel fuel leak from USTs in 1994. No other information is available.

MONTROSE CHEMICAL

Background

The Former Montrose Chemical facility is located at 20201 S. Normandie Avenue, Torrance, California. It is located immediately adjacent to and south of the Former C-6 Facility. Montrose operated a DDT-manufacturing plant at this 13-acre property from 1947 to 1982. Chemicals of concern in soil and groundwater include DDT, chloroform, chlorobenzene, benzene, pCBSA, and chlorinated VOCs. In September 1999, the USEPA issued a joint Record of Decision for the Del Amo and Montrose sites.

Regulatory Oversight

On May 8, 2003, EPA issued an Administrative Order to begin remedial design activities. Once these activities are completed, another administrative order is expected to be issued.

Recent Activities

Activities performed at the site are as follows:

Soil Gas Survey report issued in January 2004.

Baseline Groundwater Sampling Report issued in April 2004.

DNAPL Reconnaissance Report issued in June 2004.

Currently conducting DNAPL extraction pilot tests at approximately 10 gpm and investigating the use of thermal remedies.

TCE Plume Acquisition: One B-Sand well, two C-Sand wells, and two Gage Aquifer wells have been installed.

pCBSA Data Acquisition:

Schedule

Groundwater sampling in September 2004



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Installation of three downgradient wells in the C-Sand and Gage aquifer by October 2004.

Installation of additional Gage aquifer wells south of Montrose and west of Normandie by end of October 2004.

Groundwater extraction pilot testing at approximately 200 gpm in early 2005.

Preparation of a work plan for drilling approximately 100 borings by September 2004.

Issuing a comprehensive report summarizing recent activities by December 2004.

JONES CHEMICAL

The Jones Chemical facility is located adjacent to the south side of the Montrose property. In 1995, a preliminary environmental assessment (PEA) was conducted at Jones Chemical to determine whether current or past waste management activities have resulted in the release of hazardous substances. The PEA included a review of the history of operations at Jones Chemical, soil gas sampling, soil sampling, and risk screening. Analytes in soil included pesticides, VOCs, semivolatiles, PCBs, and metals. Seventy-five soil gas samples were collected from 73 locations and over 150 soil samples were collected from 77 locations. No other information was available for review. LFR Levine Fricke is the consultant working on behalf of Jones Chemical. The contact information for LFR Levine Fricke is provided in Attachment 4.

FARMER BROTHERS

This facility is located at 20333 S. Normandie Avenue, Torrance, California. In 1994, Farmer Brothers began construction of a building expansion on the east side of the property. Because of it's proximity to the Montrose property, EPA requested that soil samples be collected to determine whether hazardous substances are present. At the request of EPA, Montrose authorized McLaren-Hart to collect near-surface soil samples in the area slated for development by Farmer Brothers and analyzed the samples for DDT and its isomers and BHC. Ten samples were collected on an qual area grid basis over the area scheduled for construction. No additional information was available for review.

CAPITOL METALS

This facility is located at 20000 S. Western Avenue, Torrance, California. No information has been available for review.

INTERNATIONAL LIGHT METALS

Background

International Light Metals (ILM) is located at 19200 S. Western Avenue, bordered to the north by W. 190th Street and to the east by the Former C-6 Facility. This 67-acre property was an industrial metal processing company from the beginning of World War II to 1992. Its operations included manufacturing and processing aluminum and titanium products. The principal chemicals included VOCs such as TCE and chromium. The wastes of their operation included spent sulfuric acid and sodium hydroxide, waste oils, spent TCA, acid and caustic sludges, spent



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petroleum solvents, and PCBs. High concentrations of TCE and hexavalent chromium have been detected at this facility

Regulatory Oversight

DTSC is the oversight agency for this site. According to Chia Rin Yen of DTSC, the most recent Groundwater Health Risk Assessment Report submitted by ILM is currently being reviewed.

Recent Activities

TRC, on behalf of ILM, submitted the Groundwater Human Health Risk Assessment (HRA) to DTSC on February 16, 2004. DTSC provided comments to TRC on May 17, 2004. DTSC has indicated that revisions to the HRA are postponed until appropriate exposure parameters are identified and resolved. In its most recent quarterly progress report, TRC (July 12, 2004) states that the Corrective Measures Study (CMS) cannot be completed until DTSC completes the review and approval of the HRA and establishes a groundwater risk level for the site.

TRC sampled selected wells and analyzed for chemical and water quality parameters in support of evaluation of various treatment alternatives.

Schedule

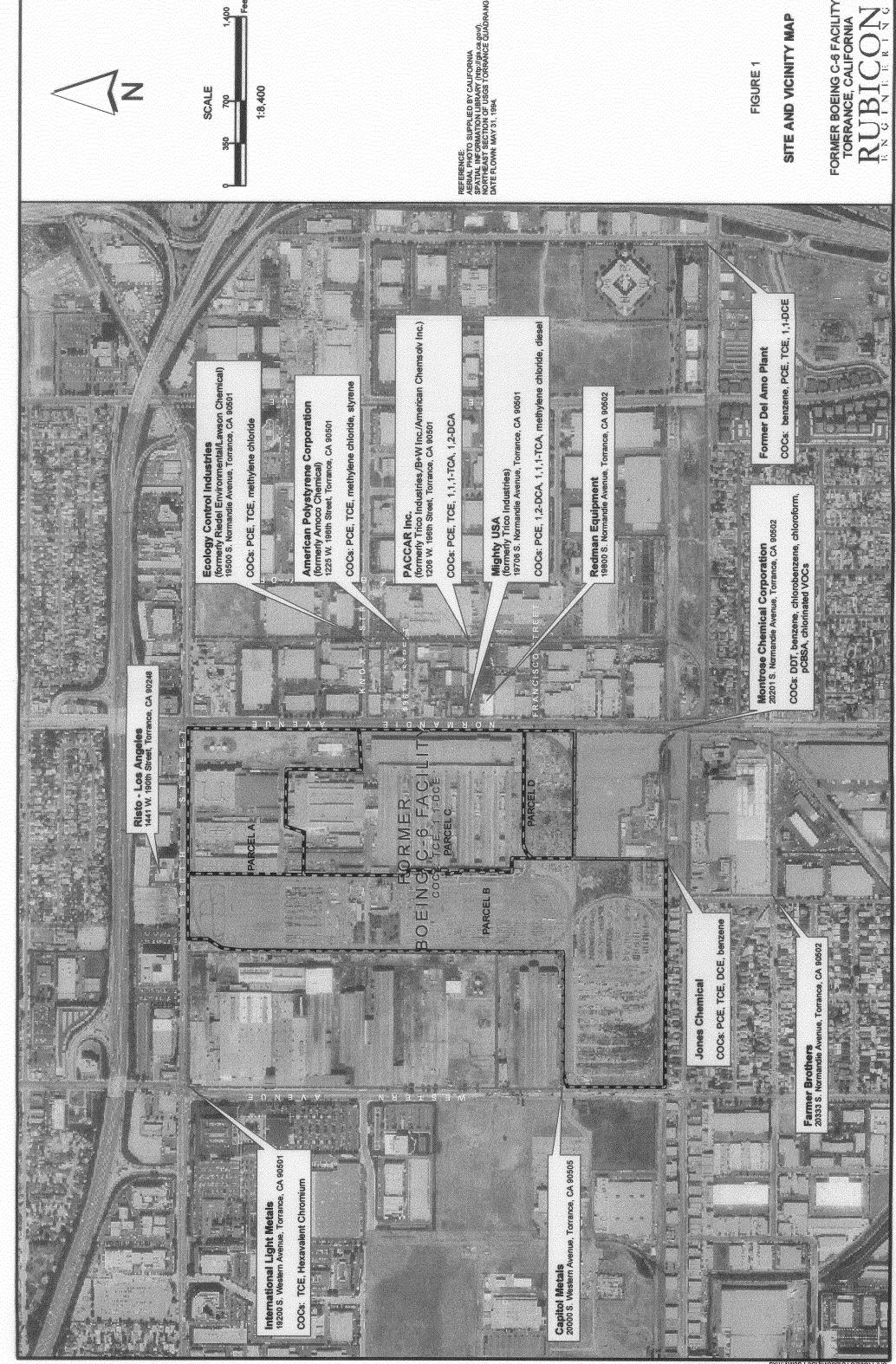
Meetings and conference calls to resolve HRA issues Submittal of HRA Addendum Continuation of Groundwater CMS

P:\1001 Univar\Archive\XDrive\97663\RCRA Storage Area Closure\SupportingDocs\RCRA pad closure report.doc

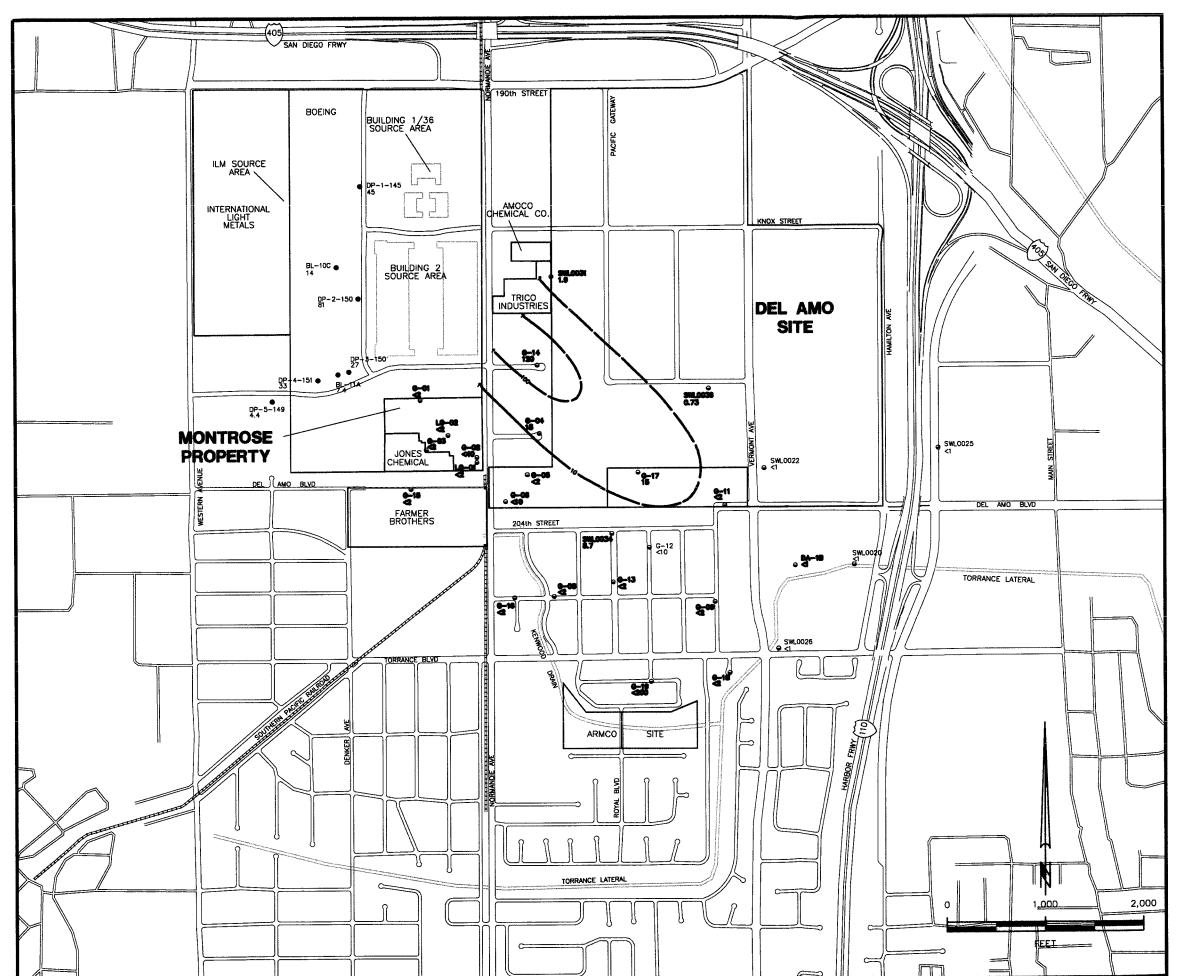


Figure 1

Site and Vicinity Map



Additional TCE Wells, Gage Aquifer



EXPLANATION

G-04 GAGE AQUIFER MONITOR WELL

CONCENTRATION IN MICROGRAMS
PER LITER, JANUARY 2004

CONCENTRATION IN MICROGRAMS P
SAMPLED PRIOR TO JANUARY 2004

CONCENTRATION TO JANUARY 2004

BL-11A CLUSTER WELL

DP-1-145

DIRECT PUSH GROUNDWATER SAMPLE LOCATION

CONTOUR LINE OF EQUAL CONCENTRATION OF TCE IN MICROGRAMS PER LITER DASHED WHERE APPROXIMATE, QUERIED WHERE INFERRED

< = LESS THAN; NUMERICAL VALUE IS THE LIMIT OF DETECTION FOR THIS ANALYSIS.

NA = NOT ANALYZED

IDENTIFIER NOTES:

G = MONTROSE MONITOR WELLS
SWL, DA = DEL AMO MONITOR WELLS

BL = BOEING/LOCKHEED MONITOR WELL

DP = ILM DIRECT PUSH GROUNDWATER SAMPLE LOCATION

NOTE:

WATER QUALITY DATA PRESENTED ON THIS MAP ARE THE MOST RECENT DATA AVAILABLE FOR EACH WELL. DATA FOR MONTROSE WELLS WERE SUPPLEMENTED WITH AVAILABLE DATA OBTAINED BY OTHERS FROM NON-MONTROSE MONITOR WELLS LOCATED IN THE SITE VICINITY.

ADDITIONAL TCE WELLS

GAGE AQUIFER

PREP BY EJB REV BY MAP RPT NO. 857.23 210-2209

BOE-C6-0067755

SCO/175861.da.10 TCE Gage ANNOTATED-NR.pdf 06/04

Additional Information on American Polystyrene

ADDITIONAL INFORMATION ON AMERICAN POLYSTYRENE

Prior to 1969, the overflow of recirculation sump was discharged into a 35-foot deep dry well which later was abandoned by backfilling capped with asphalt. Details regarding the dry well are not known. The wastewater contained styrene monomer, fatty acids, mineral oil, unspecified solvent mixture and nitrogen. A request was made to the Water Replenishment District of the Central/West Basin to inject the wastewater into the 200-foot deep well within the Silverado aquifer (Bookman Edmonston Engineering, March 1, 1973).

A December 3, 1974 letter from the Department of County Engineer refers to *Permit for Industrial Waste Discharge No. 1208* for disposal of waste.

According to a preliminary assessment by Steve Tsumura of Toxic Substances Control Division, on June 25, 1975 a certification of termination of surface water discharge into a dry well was issued by the LARWQCB. According to the County Engineer Industrial Waste Survey dated September 10, 1964, Brand Plastics had a 12,000-gallon unlined sump. Reference is also made to septic tank and dry well. There are also indications of a ground disposal permit for process cooling water from solidification of plastics. (Los Angeles County Engineer, October 13, 1972). Process water was discharged into a dry well around 1969. Amoco wished to discharge the cooling water into the dry well and apparently did so which led to a notice of violation by the County Engineer on June 29, 1971. An Amoco Chemicals Corp. drawing dated December 3, 1971, Revised February 29, 1980, shows a Truck Load Well in the extreme southwest corner of the Amoco facility.

According to an Amoco Internal Memo dated August 21, 1987, 205 gallons of styrene were dumped on the ground from a small tank located at the corner of the tank farm on August 12, 1987. This volume of styrene would equate to about 1,544 pounds assuming a temperature of 74°F.

Initial soil investigations showed styrene, ethylbenzene, tetrachloroethene (PCE), trichloroethene (TCE), toluene, benzene, 1,1,1-trichloroethane (TCA), and carbon disulfide (LARWQCB Memo, May 1, 1992). TCE (46,000 ug/kg) and PCE (8,000 ug/kg) have been detected at 15 and 10 foot depths, respectively. Elevated concentrations of methylene chloride (greater than 1,000,000 ug/l), TCE (21,000 ug/l), and PCE (9,400 ug/l) were detected in groundwater (Memo from John Campbell of Amoco to Tom Stark of McDonnell Douglas, September 9, 1991). Although certain documents claim that PCE was not used at the facility, an August 2, 1992 letter from Amoco states in the past up to 5 gallons per year of solvents were used at the facility.

A groundwater elevation map from January 1992 monitoring event show that groundwater in the western portion of the facility flows to the southwest (Simon Hydro-Search, March 11, 1992). This flow direction may cause contaminant migration to the Former C-6 facility.



Additional Information on Paccar, Inc.

ADDITIONAL INFORMATION ON PACCAR, INC.

A cesspool was constructed behind the main manufacturing building sometime during the 1960s and was abandoned around 1974-1975.

The top of the Gage aquifer is about 100 feet below grade. The regional flow is to the southeast but mounding may occur that can affect the localized gradient beneath the site. According to Hart Crowser (December 10, 2003), groundwater flows to the southwest at a gradient of 0.002. This is consistent with the groundwater flow direction at the Del Amo site to the east of Trico. It is also stated that TCE, PCE, and cis-1,2-DCE are the indicator parameters that are consistently detected. Data suggest that VOCs enter into the site groundwater from the north and northeast and that impacted groundwater may migrate off-site to the southwest (Hart Crowser, December 10, 2003).

Chemicals detected between 40 to 50 feet depth interval included diesel fuel (1,477 mg/kg), PCE (3,070 mg/kg), 1,2-DCA (17,600 mg/kg) and TCA (418 mg/kg). High concentrations of methylene chloride, TCE, and the above VOCs were detected in soil from 60 to 70 foot depth interval. High concentrations of VOCs were detected near the cesspool. In 1995 soil samples collected at Well MW-3 showed up to 8,800 ug/kg of TCE and 3,500 ug/kg of PCE. In groundwater TCE and PCE concentrations were 30,000 and 15,000 ug/l, respectively (H2O Science, July 12, 1995). In 1998, TCE and PCE concentrations in Well MW-3 were 25,000 and 12,000, respectively (Hart Crowser, August 27, 1998). Many on-site sources have been named as contributors to the soil and groundwater contamination. Consultants for Trico have stated that TCE and PCE may have originated from sources other than Trico.

Adjacent Sites Contact Information

ADJACENT SITES CONTACT INFORMATION

Site

Contact

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